National Institute of Environmental Health Sciences

The use of expert opinion to assess the risk of emergence or re-emergence of infectious diseases in Canada associated with climate change

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Abstract:

Global climate change is predicted to lead to an increase in infectious disease outbreaks. Reliable surveillance for diseases that are most likely to emerge is required, and given limited resources, policy decision makers need rational methods with which to prioritise pathogen threats. Here expert opinion was collected to determine what criteria could be used to prioritise diseases according to the likelihood of emergence in response to climate change and according to their impact. We identified a total of 40 criteria that might be used for this purpose in the Canadian context. The opinion of 64 experts from academic, government and independent backgrounds was collected to determine the importance of the criteria. A weight was calculated for each criterion based on the expert opinion. The five that were considered most influential on disease emergence or impact were: potential economic impact, severity of disease in the general human population, human case fatality rate, the type of climate that the pathogen can tolerate and the current climatic conditions in Canada. There was effective consensus about the influence of some criteria among participants, while for others there was considerable variation. The specific climate criteria that were most likely to influence disease emergence were: an annual increase in temperature, an increase in summer temperature, an increase in summer precipitation and to a lesser extent an increase in winter temperature. These climate variables were considered to be most influential on vector-borne diseases and on food and water-borne diseases. Opinion about the influence of climate on air-borne diseases and diseases spread by direct/indirect contact were more variable. The impact of emerging diseases on the human population was deemed more important than the impact on animal populations.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3407223

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker

Exposure : ☑

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Temperature: Fluctuations

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Non-U.S. North America

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease, Morbidity/Mortality

Infectious Disease: General Infectious Disease

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☑

format or standard characteristic of resource

Policy/Opinion, Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content